BOND UNIVERSITY
CENTRE FOR UROLOGY RESEARCH

Faculty Centre for Urology Research

Annual Report 2022

ACADEMIC MEMBERS OF THE CENTRE

- **Professor Russ Chess-Williams (Pharmacologist, Centre Director)**
  Research interest: Identification of cellular targets for drug development for use in the treatment of lower urinary tract functional disorders and cancers.

- **Dr Stephan Levonis (Medicinal Chemist)**
  Research interest: Synthetic chemistry and computational drug design for cancer treatments.

- **Dr Iris Lim (Biomedical Scientist)**
  Research interests: Pathophysiology and treatment of ureteral stones and stress incontinence..

- **Dr Anna Lohning (Biochemist)**
  Research interest: Molecular modelling of uroplakins and bacterial adhesion.

- **Dr Catherine McDermott (Toxicologist)**
  Research interests: Prostate and bladder cancer, cytotoxic drugs, psychological stress and the bladder.

- **Dr Kylie Mills (Biomedical Scientist)**
  Research interest: Bladder inflammation and afferent nerve function

- **Dr Christian Moro (Physiologist/Cell Biologist)**
  Research interest: Overactive and underactive bladder, inflammation.

- **Dr Katie Powell (Cell Biologist)**
  Research interest: Cell motility and prostate/bladder cancer

- **Dr Joan Roehl (Cell Biologist)**
  Research interest: Cancer biology and cell motility

- **Dr Stephanie Schweiker (Medicinal Chemist)**
  Research interests: Synthetic chemistry and computational drug design for cancer treatments

- **Dr Donna Sellers (Physiologist/Pharmacologist)**
  Research interests: Overactive bladder, diabetes & psychological stress

POSTGRADUATE RESEARCH STUDENTS

Higher Degree Research (HDR) students (PhD)

- Hyon Jeong (Minnie) Kim
- Andy Koh
- Damian Nilsson
- Eleanor West
- Jessica Smith
- Caitlin Wunsch
- Hafsa Hersi
- Liam O'Callaghan
- Charlotte Phelps
- Vineesha Veer

HDR students (Masters)

- Neil Josen Delos Reyes
- Aidan McKeon

Undergraduate research projects

- Tanya Vejdani
- Elouise Tye

HONORARY MEMBERS

- **Prof Hikaru Hashitani** (Graduate Medical School, Nagoya City University, Japan)
- **Dr Vivien Wong** (Urogynaecologist, Robina, Pindara & Varsity hospitals, Gold Coast)
- **Prof David Christie** (Radiation Oncologist, Genesis Care, Gold Coast)

Centre Mission Statement: To enhance our knowledge of the lower urinary tract with the aim of developing new treatments or enhancing current treatments of the following conditions:

- Overactive/underactive bladder
- Prostate and bladder cancers
- Stress incontinence
- Benign prostatic hyperplasia
- Interstitial cystitis
- Erectile dysfunction
- Faecal incontinence
- Urinary stone

Summary of 2022 Achievements (details of these below)

- A total of 11 prizes/awards received by Centre students and staff during 2022.
- One editorial, 3 reviews, 17 original papers and 8 abstracts published.
- Two honours and 4 PhDs completed successfully.
- First funding obtained from pharmaceutical industry (Kashiv Biosciences)
- New technique (cystometry in mice) established (useful for industry drug testing)

OVERVIEW OF EXTERNAL ACTIVITIES 2022

[1] International Collaborations

Nagoya City University - 2022 was the year we started to recover from the effects of covid on international relations. Two students, Sae Matsuda and Taishi Masutani, visited from Nagoya and undertook research projects with Iris Lim and Donna Sellers during August to November. The studies on urethral physiology generated a lot of data which is currently being written into a joint Bond/Nagoya full paper by Iris Lim.

Gothenburg University - Prior to covid we would also host research students from Gothenburg University and discussions are underway to receive two students in September 2023.

[2] Conferences/workshops organised by Centre staff

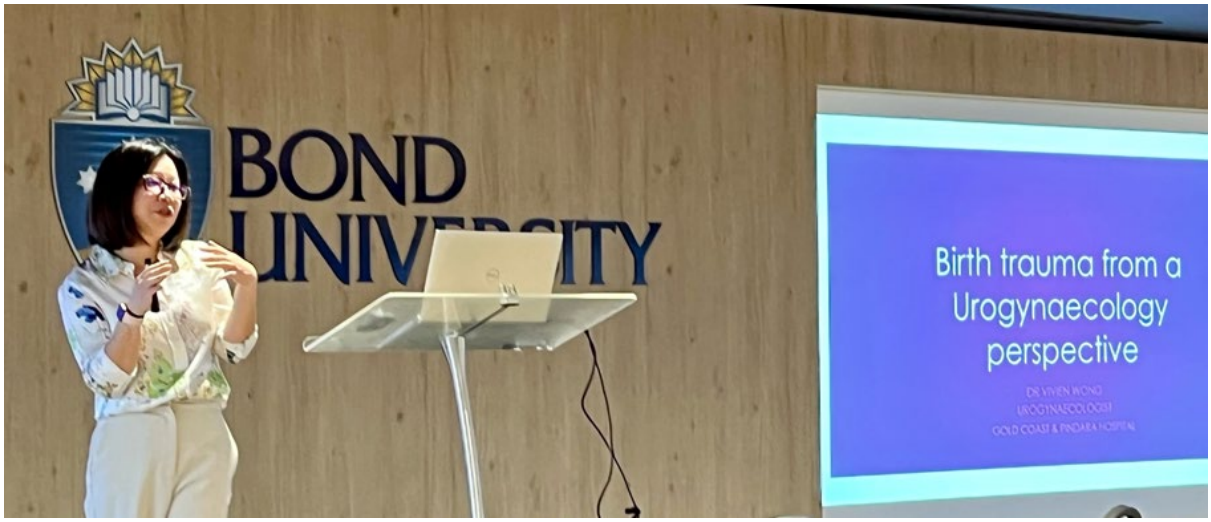
1. **National Symposium on Recent Advances in Urogenital and Gastrointestinal Research.** Online national meeting organised by Donna Sellers and Iris Lim. HDR presentations by Damian Nilsson, Charlotte Phelps, Vineesha Veer, Aidan McKeon.

2. **National Conference on Incontinence (Melbourne)** organised by the Continence Foundation of Australia. Workshop on "Natural and Alternative treatments for Urinary Incontinence" presented by Christian Moro, Catherine McDermott, Donna Sellers and colleagues from Monash University (Dr Betty Exintaris) and Wollongong (Dr Kylie Mansfield).

3. **Royal Australian Chemistry Congress (Brisbane)**. Chemical Education Division, Stephanie Schweiker (Treasurer & Chair).

[3] Continence Foundation of Australia (CFA) "Meet-and-Greet" event.

In September the Queensland branch of the CFA held a "Meet-&-Greet" event for continence health professionals that involved staff from the Centre. The event was organised by the local State Education and Activities Committee (SEAC) where Russ Chess-Williams is a member. The main speaker was Dr Vivien Wong (Urogynaecologist) an honorary member of the Centre and the event was held at the new Brisbane campus of Bond University. Feedback was very positive for both the speakers and the location.



Dr Vivien Wong, Centre for Urology giving a urogynaecology perspective on birth trauma

[4] Other conference activities

- **Australian Physiological Society** (AuPS) annual scientific meeting (Hobart): Oral presentations Iris Lim and Christian Moro. Poster presentations ; Charlotte Phelps and Vineesha Veer.

- **Urology Society of Australia and New Zealand** (USANZ, Gold Coast). Attended by RCW and Donna Sellers. Meeting with all members of the external advisory board.

- **Royal Australian Chemistry Congress** (RACI). Oral: Stephan Levonis and Stephanie Schweiker. Poster: Minnie Kim

- **The Seventh Queensland Annual Chemistry Symposium** (QACS, Brisbane). Speakers: Caitlin Wunsch and Minnie Kim.

- **National Conference on Incontinence** (NCOI, Melbourne). Workshop: "Natural and Alternative treatments for urinary incontinence". Posters: Damian Nilsson and Aidan Mckeon.

- **Australian Society of Clinical and Experimental Pharmacologists and Toxicologists (ASCEPT, Perth).** Oral communication: Iris Lim. Posters: Damian Nilsson and Aidan McKeon.

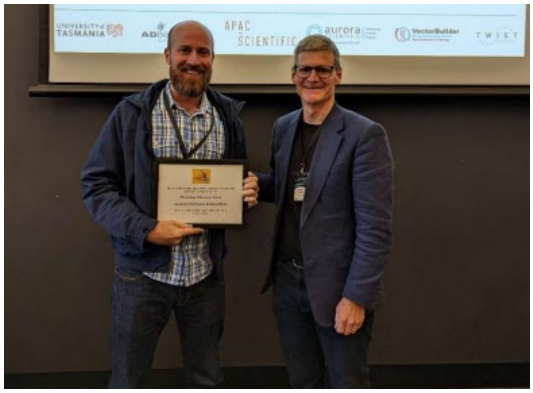
- **National Symposium on Recent Advances in Urogenital & Gastrointestinal Research** (online). Session Chair: Iris Lim. Oral presentations: Damian Nilsson, Charlotte Phelps, Aidan Mckeon and Vineesha Veer.

- **Innovation in Chemical Education** (Brisbane): Invited workshop: Stephanie Schweiker.

- **Brisbane Cancer Conference.** Attended by Joan Roehl

PRIZES AND AWARDS IN 2022

1. **Christian Moro -** Queensland Tall Poppy Science Award presented by the Australian Institute of Policy and Science.
2. **Stephanie Levonis, Amanda Tauber & Stephanie Schweiker -** Horizon Prize for Education awarded by the Royal Society of Chemistry (International).
3. **Andy Koh -** Prize for Best Student Oral Presentation - Health, Safety and Environment Symposium, Royal Australian Chemistry Institute (RACI) National Congress.
4. **Stephanie Schweiker** - JoVe Educator Innovation Award (International)
5. **Stephanie Schweiker, Amanda Tauber & Stephan Levonis -** Australian Award for University Teaching (AAUT). National citation for a new technology-enhanced chemistry curriculum.
6. **Iris Lim** - Wharton-QS Reimagine Education Awards**,** National, Finalist.
7. **Stephanie Schweiker, Amanda Tauber & Stephan Levonis -** The Centenary of Federation Team Teaching Award from the Royal Australian Chemical Institute (RACI)
8. **Stephanie Schweiker, Amanda Tauber & Stephan Levonis** - Wharton-QS Reimagine Education Awards **(**National, Finalist)
9. **Charlotte Phelps –** Winner of the Bond University 3-Minute Thesis competition.
10. **Stephanie Schweiker -** Citation got her contribution to the field of chemical education in Australia **(**National, RACI division of Chemical Education)
11. **Stephanie Schweiker** - RACI Citation for contribution to Chemistry in Queensland
12. **Christian Moro –** Physiology Education grant awarded by the Australian Physiological Society during the Hobart annual conference.



Christian Moro receives the Physiology Education grant from the Australian Physiological Society.

RESEARCH STUDENT SUPERVISION/TRAINING

With relatively high teaching loads for staff, the research students are critical to the success of the Centre. In 2022 the Centre had 10 PhD students, 2 Masters by Research and 2 Honours students enrolled. In addition, some staff were involved in the supervision of several research projects for undergraduate Biomedical Science students and MD projects for medical students. During the year, four HDR students were awarded PhDs with another submitting his thesis for examination.

PhD Completions

- **Amanda Tauber** - Design and synthesis of selective PARP14 inhibitors.
- **Caleb Kam** - Design and synthesis of selective PARP14 inhibitors.
- **Andy Koh** – The effects of preworkout supplements on the cardiovascular system
- **Eleanor West** – The effects of inflammation on the afferent and efferent nerve responses of the bladder

STAFF EXTERNAL ROLES

Russ Chess-Williams

- International Consultation on Incontinence (ICI) (Cell Biology Panel member)
- Visiting Professor, Nagoya City University, Japan
- ASCEPT Urogential and Gastrointestinal Special Interest Group (Co-chair)
- ASCEPT Scientific Committee
- State Education & Activities Committee (SEAC), Queensland committee of the CFA.
- ANZ Continence Journal Editorial Board
- Naunyn-Schmeidebergs Archives of Pharmacology Editorial Board
- Frontiers in Autonomic Neuroscience Editorial Board

Stephan Levonis

- Royal Australian Chemical Institute, Queensland Chemical Education Group

Stephanie Schweiker

- President-Elect Royal Australian Chemical Institute Qld branch (2023-present)
- International Federation of National Teaching Fellows – Associate member
- Chemical Education for the Royal Australian Chemical Institute (National Division Treasurer)

Donna Sellers

- Quality Use of Medicines (Gold Coast)
- ASCEPT Urogential and Gastrointestinal Special Interest Group (Secretary)
- Frontiers in Pharmacology Editorial Board

Christian Moro

- ANZ Continence Journal Editorial Board

CURRENT FUNDING

- Kashiv Biosciences "Testing new compounds in an acute murine cystitis model" - McDermott, Sellers & Chess-Williams ($38,697)
- Australian Bladder Foundation "Lubricin: Innovative intravesical therapy for bladder dysfunction?" - $14,280 (Sellers, Chess-Williams, McDermott)
- RIGB – Joint support for animal facility with CJ Centre for Regenerative Medicine ($18,194)
- Rotary Club Sandy Bay – Australian Rotary Health Scholarship awarded to Hyo Jeong (Minnie) Kim - $49,000
- Physiological Society Education Research grant (Iris Lim) - $3,000
- ECR Seed grant to Iris Lim – Faculty of Health Sciences & Medicine, Bond University
- HSM ECR Seed Grant (2021-22) "Investigating the role of matrix metalloproteinase 14 (MMP14) in prostate cancer cell migration. ($9,844).

UPDATE ON CURRENT RESEARCH PROJECTS

PATHOPHYSIOLOGY PROJECTS

(i) ***Control of bladder vascular tone and blood flow.*** The importance of blood flow to the lower urinary tract has been identified as a major contributor to bladder overactivity and prostatic enlargement. These studies examine the arteries supplying the bladder with blood to identify which neurotransmitters, receptor and ion channels are important in the control of blood flow through these vessels.

2022 *- HDR student Damian Nilsson has submitted his PhD thesis*
- Presentations at ASCEPT and NCOI conferences

(ii) ***Bladder inflammation and afferent nerve activity***. One of the greatest clinical problems in Urology currently is Interstitial cystitis/bladder pain syndrome, an inflammatory condition and the area of urology with the greatest need for a new effective treatment. The development of new therapies is hindered by our lack of knowledge of this condition. In our laboratories we have developed an animal model for this condition that can be used to study the basic physiology of the lower urinary tract and to assess the effects of novel drugs. We currently have studies in collaboration with an Indian pharmaceutical company using this model.

2022 *- Eleanor West awarded a PhD*
- New in vivo cystometry technique in mice established (Donna Sellers)
- Collaboration/funding with Kashiv Biosciences to test novel compounds in our model (Catherine McDermott & Donna Sellers)

(iii) ***Ureter physiology and potential treatments for renal stones.*** Stones formed in the kidneys cause extreme pain as they pass down the ureters and into the bladder. Our studies are investigating the mechanism involved in regulating contractions of the ureter using porcine ureter as a model of human contractile activity. We are identifying which receptors and ion channels and hormones control these contractions, with the aim of identifying new therapeutic targets and ultimately new treatments.

2022 - Published review - Drug targets for medical expulsive therapy (Iris Lim)
- One original paper published
- Results presented at ASCEPT and AuPS conferences

(iv) ***Bladder physiology and the effects of ageing.*** These studies examine the responses of the bladder smooth muscle and mucosa to agonists, particularly muscarinic agonists, with the aim of identifying the intracellular pathways involved in mediating contraction. The effects of ageing on these mechanisms is also being investigated. The studies are undertaken by two HDR students (Charlotte Phelps & Vineesha Veer) who have presented their data at several national conferences and had several full manuscripts accespted during 2022.

2022 - Several oral and poster presentations at AuPS and NCOI conferences
- Bond winner, 3-minute Thesis competition (Charlotte Phelps)
- Queensland Tall Poppy Award (Christian Moro)

CANCER PROJECTS

(v) ***Development of sialyltranferase Inhibitors.*** This project aims to develop novel inhibitors of the enzyme sialyltransferase. Expression of this exzyme is increased in malignant cells and inibitors may be effective anti-cancer drugs. The project covers initial drug design, through synthesis to testing on cultured cancer cells.

2022 - Studentship to Minnie Kim funded by Rotary Health Sandy Bay
- Presentations to the RACI and QACS conferences
- Original paper published on PLOSone

(vi) ***Alpha-blockers & prostate cancer.*** Alpha-blockers are a group of drugs used to treat hypertension and enlarged prostate but some also have cytotoxic effects, killing cancer cells. In laboratory and retrospective clinical studies we have shown some of these drugs can enhance the effects of radiotherapy on prostate cancers. In a collaboration with colleagues at Griffith University (Prof Shai Anoopkumar-Dukie), Genesis Care (Prof David Christie) and John Flynn Private hospital (Liam King), our current studies examine the clinical effectiveness of these drugs in a prospective clinical trial.

2022 - Ramsay Health provide time to Liam King (Pharmacist) to run the trial.
- Ethical approval was obtained from Genesis Care Ethics Committee.
- A review on the radioresistance of cancers published.

(vii) ***Alpha-blockers and bladder cancer.*** In 2022 a new project was initiated investigating the potential of alpha-blockers as a treatment for bladder cancer. To start, the cytotoxic effects of alpha-blockers on cultured human bladder cancer cells are being examined.

2022 - Liam O'Callaghan (Bond HDR) has started a PhD
- Liam passed his PhD confirmation
- Doxazosin has been identified as being toxic to bladder cancer cells.

(viii) Development of selective PARP14 inhibitors. Parp14 is an enzyme that is overexpressed in cancer cells, altering metabolic pathways to enable the cells to survive in low oxygen, as occurs within a tumour. A number of compounds have been designed using computer modelling, they have been synthesised and are now in the process of being evaluated.

2022 - a new PhD student has commenced

NEW PROJECTS FOR 2022

Diabetes and psychological stress – Various urinary problems are associated with these two conditions. This study will employ two animal models that have been established at CUR (streptozotocin-induced diabetes and water avoidance stress), to investigate the mechanisms involved in each type of bladder dysfunction and the influence of stress on diabetic bladder function.

- Study undertaken by HDR student Aidan McKeon and Research Assistant Kylie Mills
- New in vivo cystometry technique in mice established
- Data presented at National Symposium and NCOI conferences.

Pre-clinical studies of novel treatments for interstitial cystitis/bladder pain syndrome
Catherine McDermott and Donna Sellers have established a collaboration with Kashiv Biosciences in India, for us to test their novel drugs in our animal models of interstitial cystitis. We have regular teleconferences with the scientists at the company and have been supplied with the first compound for testing.

- External funding
- Great potential for further collaborations & funding

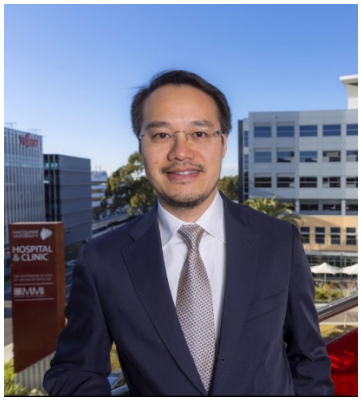
Non-receptor effects of anti-cholinergic drugs used in the treatment of overactive bladder
Anticholinergic drugs are used to treat overactive bladder where they act by blocking muscarinic receptors. However our previous studies have shown they have additional actions that may contribute to their clinical effectiveness. Vineesha Veer, a new HDR will investigate these mechanisms.

- Data presented at National Symposium and AuPS conferences

ADVISORY BOARD

External Advisors

Professor Dirk van Helden. NHMRC Principal Research Fellow & Brawn Senior Fellow (retired), School of Biomedical Science and Pharmacy, University of Newcastle.



Dr Vincent Tse. Consultant Urologist at Concord Hospital, Sydney and Associate Professor at the University of Sydney.

During 2022, Rowan Cockerell, Chief Executive Officer of the Continence Foundation of Australia (CFA) accepted an invitation to join the Centre's Advisory Board.

Rowan Cockerell. Chief Executive Office, Continence Foundation of Australia with headquarters in Melbourne.

Meetings

Two meetings were held with the external advisors during the year. Firstly, an informal meeting at the convention centre on the Gold Coast in March when the advisors were attending the annual meeting of the Urology Society of Australia and New Zealand (USANZ) conference. A more formal meeting was held online in December and this was attended by Vincent Tse and Dirk van Helden. A copy of the minutes is attached (appendix 1). A copy of the Terms of Reference is also included (appendix 2)

CENTRE PUBLICATIONS 2022

EDITORIALS

1. Sato, MA., De Luca, L.A., Aronsson, P. and Chess-Williams, R. (2022) Editorial: Novel Mechanisms Involved in Urinary Bladder Control: Advances in Neural, Humoral and Local Factors Underlying Function and Disease- Volume II. Frontiers in Physiology 13 (17 Oct), Article number 1056316 http://www.doi:10.3389/fphys.2022.1056316

REVIEWS

2. Moro C, Phelps C, Veer V, Clark J, Glasziou P, Tikkinen KAO & Scott AM (2022). The effectiveness of parasympathomimetics for treating underactive bladder: A systematic review and meta-analysis. Neurourology and Urodynamics 41(1), 127-139. http://diu.org.10.1002/nau.24839

3. Lim I, Sellers DJ, Chess-Williams R. (2022) Current and emerging pharmacological targets for medical expulsive therapy. Basic and Clinical Pharmacology and Toxicology 130(S1):16-22. https://doi.org/10.1111/bcpt.13613

4. King L, Nijole B, Christie D, Chess-Williams, R, Sellers D, McDermott C, Dare & Anoopkumar-Dukie S. (2022) Drivers of radioresistance in prostate cancer. Journal of Clinical Medicine 11(19): Article number 5637. http://doi.org/10.3390/jcm11195637

PEER-REVIEWED ORIGINAL PAPERS

5. Kim, H. J., Schweiker, S., Powell, K. & Levonis, S.,(2022) An efficient and robust HPLC method to determine the sialylation levels of human epithelial cells. PLoS One. 17(1),Article number e0257178. http://doi.org.10.1371/journal.pone.0257178

6. Phelps C, Chess-Williams R and Moro C. (2022) The dependence of urinary bladder responses on extracellular calcium varies between muscarinic, histamine, 5-HT (serotonin), neurokinin, prostaglandin, and angiotensin receptor activation. Frontiers in Physiology, Article 841181 https://doi.org/10.3389/fphys.2022.841181

7. Lim I & Chess-Williams R. (2022) Mirabegron attenuates porcine ureteral contractility via α1-adrenoceptor antagonism. Naunyn-Schmiedeb Arch Pharmacol 395(7), 839-847. https://doi.org/10.1007/s00210-022-02244-0

8. West EG, McDermott C, Chess-Williams R & Sellers DJ (2022) Partial recovery of voiding function in female mice following repeated psychological stress exposure.

PlosONE 17(4 April), Article number e0266458. https://doi.org/10.1371/journal.pone.0266458

9. English C, Mayr HL, Lohning A & Reidlinger DP. (2022) The association between dietary patterns and the novel inflammatory markers platelet-activating factor and lipoprotein-associated phospholipase A2: a systematic review. Nutrition Reviews 80(6), 1371-1391. Http://doi.org10.1093/nutrit/nuab051

10. Critchton M, Davidson AR, Innerarity C, Marx W, Lohning A, Isenring E & Marshall S. (2022) Orally consumed ginger and human health: An umbrella review. American Journal of Clinical Nutrition 115(6), 1511-1527. http://doi.org.10.1093/ajcn/nqac035

11. West EG, McDermott C, Chess-Williams R & Sellers DJ. (2022) Mirabegron and solifenacin are effective for the management of the increased urinary frequency induced by psychological stress in female mice. Scientific Reports 12(1): Article number 12365. http://doi.org/10.1038/s41598-022-16487-7

12. Phelps, C., & Moro, C. (2022). Ageing and the bladder mucosa: A scoping review of recent animal model studies. Australian and New Zealand Continence Journal, 28(4), 77-83. https://doi.org/10.33235/anzcj.28.4.77-83

13. Moro C & Phelps C (2022) Urothelium removal does not impact mucosal activity in response to muscarinic or adrenergic receptor stimulation. Tissue Barriers Article number 2099214. http://doi.org.10.1080/21688370.2022.2099214

14. Sarapis K, George ES, Marx W, Mayr HL, Willcox J, Esmaili T, Power KL, Folasire OS, Lohning A, Garg M, Thomas CJ & Itsiopoulos C (2022) Extra virgin olive oil high in polyphenols improves antioxidant status in adults: a double-blind, randomized, controlled, cross-over study (OLIVAUS). European journal of Nutrition 61(2), 1073-1086. http://doi.org.10.1007/s00394-021-02712-y

15. Tauber, A. L., Levonis, S. M. & Schweiker, S. S. (2022) Gamified Virtual Laboratory Experience for In-Person and Distance Students. In: Journal of Chemical Education. 99(3), 1183–1189. http://doi.org10.1021/acs.jchemed.1c00642

16. Veer V, Phelps C & Moro C. (2022) Incorporating Mixed Reality for Knowledge Retention in Physiology, Anatomy, Pathology, and Pharmacology Interdisciplinary Education: A Randomized Controlled Trial. Medical Science Educator 32(6), 1579-1586. http://doi.org/10.1007/s40670-022-01635-5

17. Moro C & Phelps C (2022) Smartphone-based augmented reality physiology and anatomy laboratories. Medical Education 56(5), 575-576. http://doi.org10.1111/medu.14756

18. Moro C (2022) Utilizing the metaverse in anatomy and physiology. Anatomical Sciences Education 00,1-8. http://doi.org10.1002/ase.2244

19. McLean, M., Phelps, C., Smith, J., Maheshwari, N., Veer, V., Bushell, D., Matthews, R., Craig, B., & Moro, C. (2022). An authentic learner-centered planetary health assignment: A five-year evaluation of student choices to address Sustainable Development Goal 13 (Climate Action). *Frontiers in Public Health, 10.* https://doi.org/https://doi.org/10.3389/fpubh.2022.1049932

20. Moro, C., McLean, M., & Phelps, C. (2022) Embedding planetary health concepts in a pre-medical physiology subject, Medical Teacher, 45(2), 179-186. http://doi:10.1080/0142159X.2022.2118041

21. Moro, C., McLean, M., & Phelps, C. (2022) Embedding planetary health concepts in a pre-medical physiology subject, Medical Teacher, 45(2), 179-186, http://doi:10.1080/0142159X.2022.2118041

PUBLISHED CONFERENCE ABSTRACTS

Australian Society of Clinical & Experimental Pharmacologists & Toxicologists (ASCEPT, Perth)

22. Iris Lim (2022) The effects of sildenafil on porcine distal ureteral contractions. Abstract number 533. Abstract available at: https://www.asceptasm.com/wp-content/uploads/2022/11/APSA-ASCEPT-2022-poster-abstract-book-1.pdf

23. Donna Sellers (2022) Severe hyperglycaemia impairs bladder contractility in a murine model of diabetes mellitus. Abstract number 534. Abstract available at: https://www.asceptasm.com/wp-content/uploads/2022/11/APSA-ASCEPT-2022-poster-abstract-book-1.pdf

Australian Physiological Society (AuPS, Hobart)

24. Christian Moro (2022) The school of hard knocks: what did not work when introducing technology-enhanced learning to physiology lectures, labs and workshops. Proceedings of the AuPS, Abstract number 41I. Abstract available at: http://aups.org.au/Proceedings/52//AuPS_ASB_2022_ProceedingsV52.pdf

25. Iris Lim (2022) To Quitch or not to Quitch: Using a gamified mobile app to increase student performance and engagement. Proceedings of the AuPS, abstract number 125E. Abstract available at http://aups.org.au/Proceedings/52//AuPS_ASB_2022_ProceedingsV52.pdf

26. Charlotte Phelps, Russ Chess-Williams & Christian Moro (2022) Urinary bladder contractions and the influence of extracellular calcium. Proceedings of the AuPS, abstract number 74O. Abstract available at http://aups.org.au/Proceedings/52//AuPS_ASB_2022_ProceedingsV52.pdf

27. Christian Moro & Charlotte Phelps (2022). Incorporating planetary health concepts into physiology. Proceedings of the AuPS, abstract number 117E. Abstract available at http://aups.org.au/Proceedings/52//AuPS_ASB_2022_ProceedingsV52.pdf

28. Vineesha Veer, Russ Chess-Williams & Christian Moro (2022) The urothelium and lamina propria as an alternative target for clinical antimuscarinics. Proceedings of the AuPS, abstract number 168P. Abstract available at: http://aups.org.au/Proceedings/52//AuPS_ASB_2022_ProceedingsV52.pdf

National Conference on Incontinence (NCOI, Melbourne)

29. Nilsson D, Chess-Williams R & Sellers D. (2022) The phosphodiesterase inhibitors tadalafil (Cialis®) and sildenafil (Viagra®) enhance vasodilation of the bladder vasculature. ANZ Continence Journal 28(4). Abstract available at: https://journals.cambridgemedia.com.au/anzcj/volume-28-supplement/abstracts-podium-presentations-30th-national-conference-incontinence-ncoi-2022-11-14-may-2022-melbourne-convention-exhibition-ce https://doi.org/10.33235/anzcj.28.suppl.s4

Appendix 1

Faculty Centre for Urology Research (CUR)

Advisory Board Meeting

Date: Thursday 15th December 2022

Time: 3:30 pm – 4:20 pm

Venue: Zoom

Attendees: Professor Russ Chess-Williams, Director
Professor Dirk Van Helden (External Member)
Dr Vincent Tse (External Member)
Assoc. Professor Donna Sellers (Academic Member)
Assoc. Professor Christian Moro (Academic Member)
Assoc. Professor Anna Lohning (Academic Member)

Apologies/Absent: Assist. Prof. Iris Lim (Academic Member)
Rowan Cockerell (CEO, Continence Foundation of Australia)

1	Welcome & apologies	The Chair introduced and welcomed everyone. (Acknowledgement of Country by Dr Lohning) The Chair gave a brief overview of the Centre's Mission and comparison to other University Centres insofar as CUR comprising members heavily involved in teaching as well as research and that COVID had somewhat impacted output. Dr Tse commented that he was impressed with the Centre's research output and expertise. It was noted that Prof. Helden was having microphone issues.

		The Chair also mentioned a few areas of current research including: - - prostate and bladder cancer drug design, synthesis and subsequent testing (*in vitro/in vivo*). Eg. PARP14 inhibitors - Development of animal models (interstitial cystitis, stress, overactive bladder, diabetes, radiotherapy) - Lower urinary pathophysiology projects including voiding patterns (*in vivo)* - Inflammation - Stress incontinence
2	Items for Discussion	Dt Tse mentioned a key area for future focussed research would be treatments to reverse the effects of irradiation. External Funding: - The Chair mentioned prior links of the Centre to big pharma (Astellas, Abbott) and currently we were developing links with smaller biomedical companies (Lubris (US), Kashiv Biosciences (India)). Potential to re-connect in 2023. Also good relationship with CFA and with previous funding from the Australian Bladder Foundation. - The Chair asked Members to consider potential areas to seek external funding. - Potential to broaden the network for potential funding was considered and by attending meetings such as o SUFU (US) (functional urology) to be held end Feb 2023 in Nashville. Dr Tse stated there is at least one day devoted to basic science & it was a good option o AUA/EAU (American and European Urology societies) o Members to consider what to bring to these meetings that will be of interest to delegates etc. o Dr Tse mentioned Innovations Grants for devices. May be something similar for novel drugs developed at CUR o 31st National Conference on Incontinence (NCOI) & 4th Functional Urology Symposium (FUS) by Continence Foundation of Australia. 14-17 June 2023 in Adelaide. Dr Tse asked Members to send potential topics for workshops and if members could send a brief outline of their areas of research

The meeting closed at 4:20pm

The Chair suggested the next meeting be around March/April 2023.

Appendix 2

Faculty Centre for Urology Research

Advisory Group

Terms of Reference

FUNCTION

The Centre for Urology Research (CUR) is a Faculty, multidisciplinary, research group that represents all members of staff and students with an interest in the lower urinary tract or pelvic conditions such as erectile dysfunction and faecal incontinence. The Centre Director reports to the Executive Dean, Faculty of Health Sciences & Medicine, Bond University.

MISSION STATEMENT

To enhance our knowledge of the lower urinary tract with the aim of developing new treatments or enhancing current treatments of the following conditions:

- Overactive and underactive bladder
- Prostate and bladder cancers
- Stress incontinence
- Benign prostatic hyperplasia
- Interstitial cystitis
- Erectile dysfunction
- Faecal incontinence

VISION

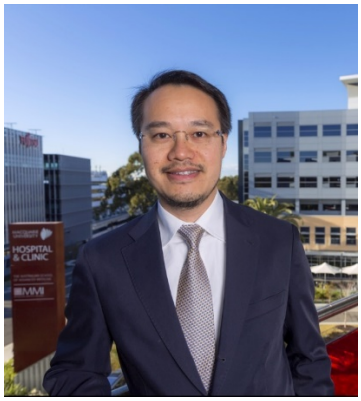
A worldwide reputation for excellence in the field of academic urology, the Centre known for identifying novel targets for drug development.

MEMBERSHIP

(i) **Chair**: Director, Centre for Urology Research

(ii) **External Advisors**:

Professor Dirk van Helden. NHMRC Principal Research Fellow & Brawn Senior Fellow (retired), School of Biomedical Science and Pharmacy, University of Newcastle.



Dr Vincent Tse. Consultant Urologist at Concord Hospital, Sydney and Associate Professor at the University of Sydney.

Rowan Cockerell. Chief Executive Office, Continence Foundation of Australia with headquarters in Melbourne.

(iii) **Executive Committee Members**: Senior academic staff of CUR (Full and Associate Professors) and external partners.

TERMS OF REFERENCE

1. Contribute to the development and review of the Centre's strategic plan.

2. Provide strategic advice on the direction of research projects and their alignment with national trends and industry needs.

3. Advise on sources of future funding, partnerships and collaborations.

4. Where required, assist with problems arising (eg. how to increase patient participation in our decision making).

SCHEDULE FOR MEETINGS

The Advisory Group will meet twice a year.